

FIG. 1

```
glMatrixMode( GL_PROJECTION );
glLoadMatrix( intrinsic matrix of projector );
glMultMatrix( xform for rendering view )
glMultMatrix( inverse(xform for shading view) );
glMatrixMode( GL_MODELVIEW );
glLoadMatrix( xform for shading view );
// set virtual light positon(s)
// render graphics model
```

FIG. 2

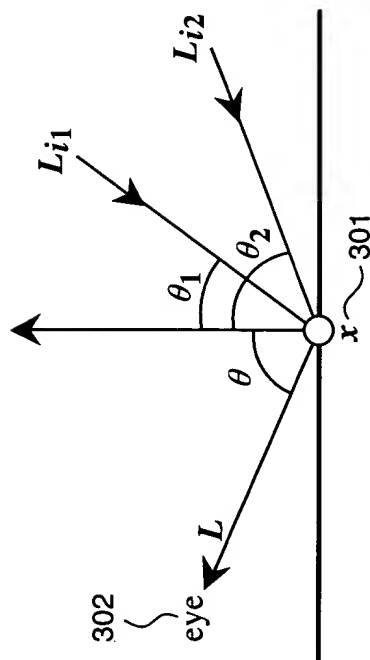


FIG. 3a

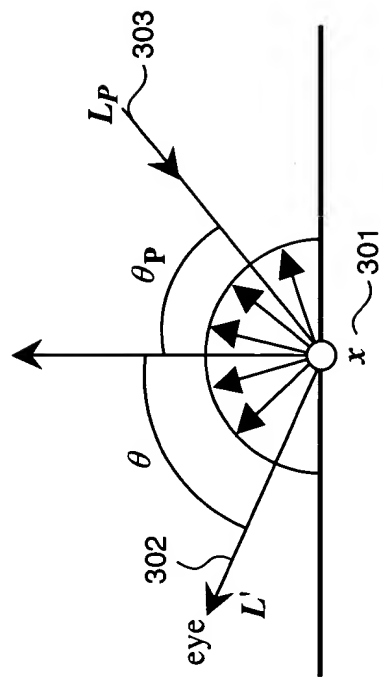


FIG. 3b

FIG. 4 is a block diagram of a system 400 for generating a 3D model of a scene. The system 400 includes a scanner 110, a processor 401, and a display 160. The scanner 110 is configured to capture 2D pixels 114 and 3D points 112 from a scene 101. The processor 401 is configured to process the 2D pixels 114 and 3D points 112 to generate a 3D model 111. The display 160 is configured to display the 3D model 111. The system 400 also includes a camera 135 and a projector 161. The camera 135 is configured to capture a 2D image of the scene 101. The projector 161 is configured to project a 2D image of the scene 101 onto a surface. The system 400 is configured to generate a 3D model of the scene 101 by combining the 2D image from the camera 135 and the 2D image from the projector 161.

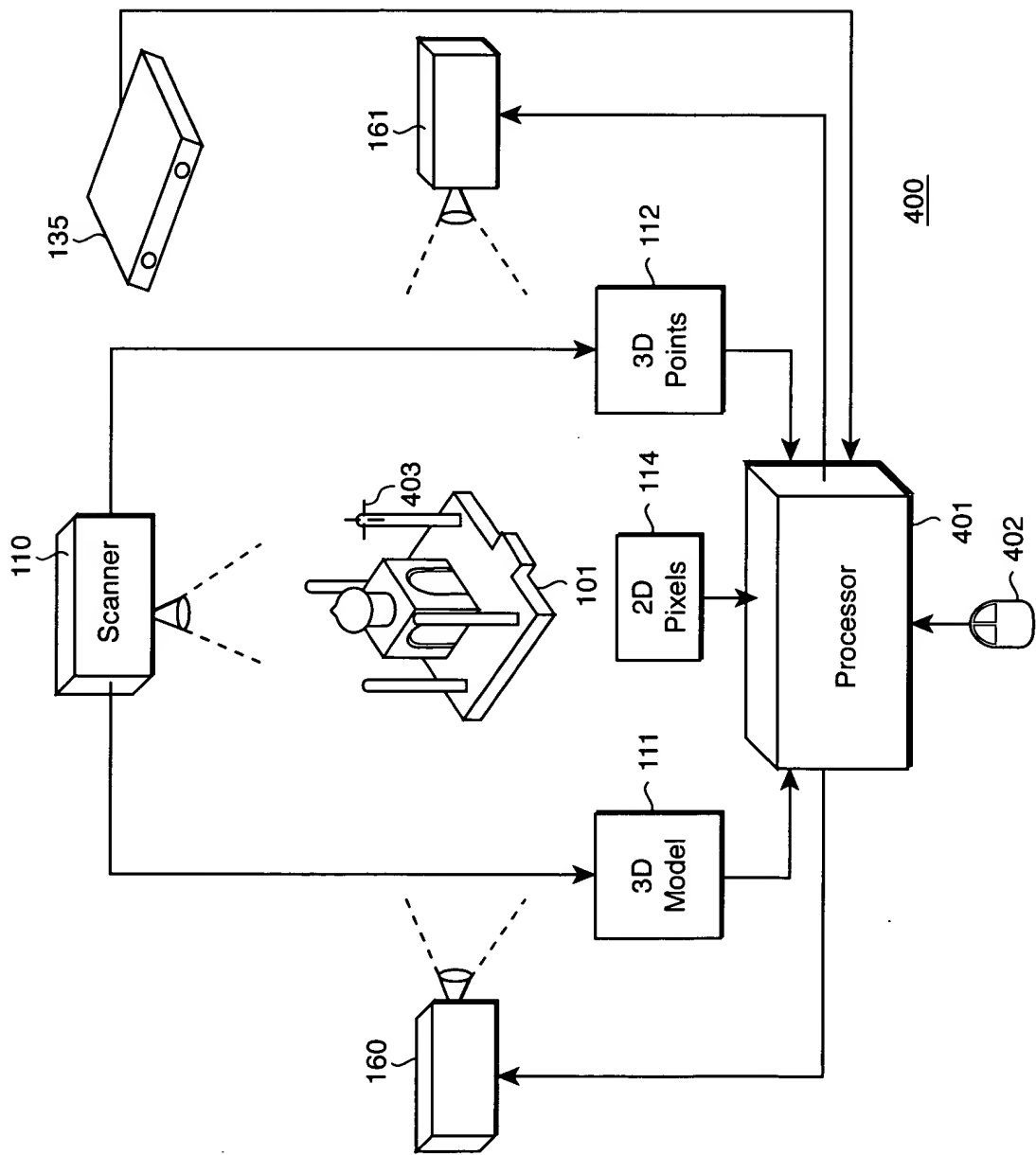


FIG. 4

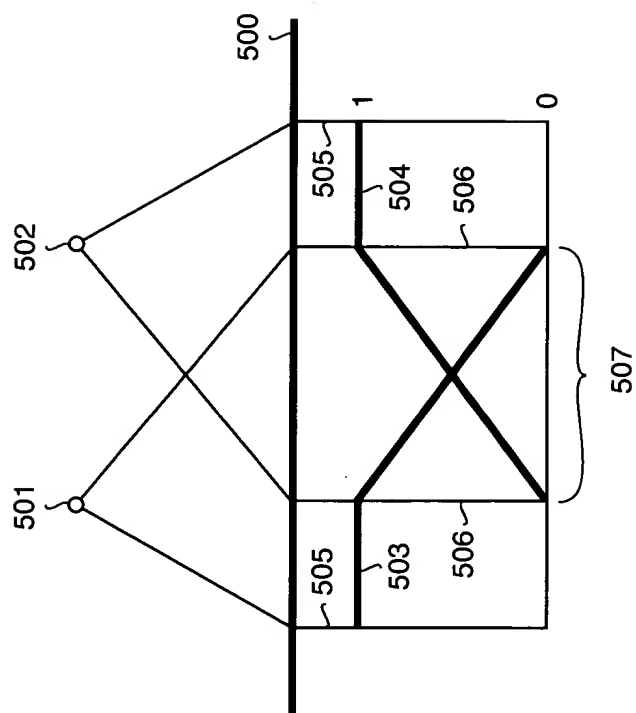


FIG. 5
PRIOR ART

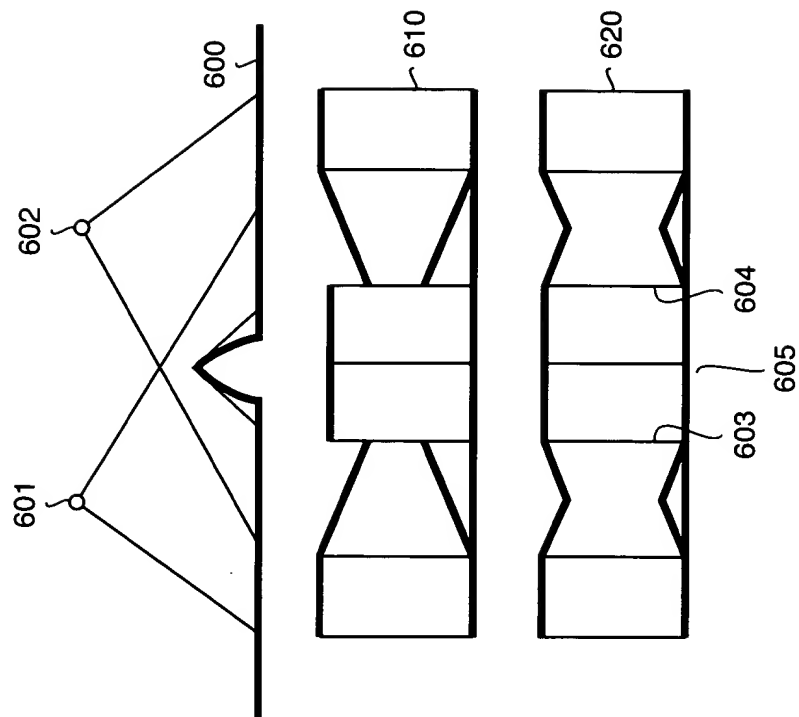
[illegible]

FIG. 6

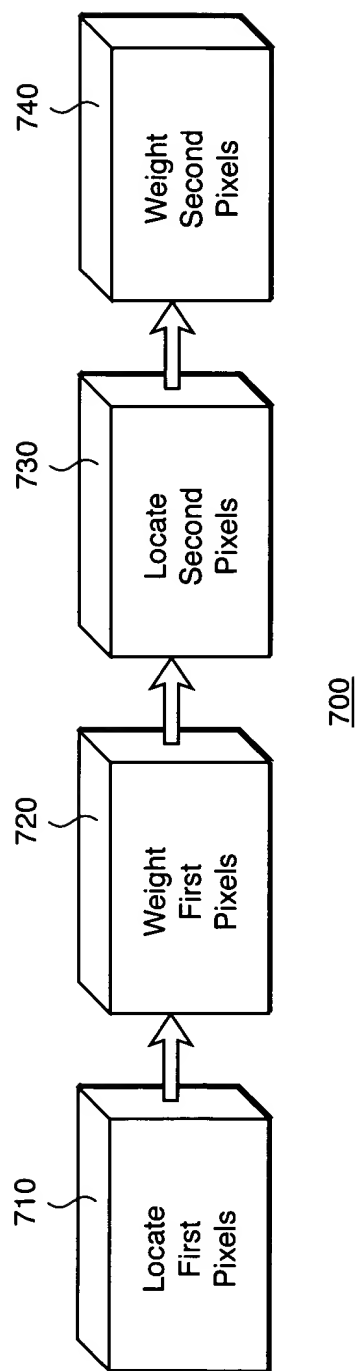


FIG. 7

At each projector,

- Compute boundaries between regions of overlap count 1 and >1
- Compute depth discontinuities using edge detection in depth buffer
- For each pixel in overlap region
 - update shortest distance to overlap count = 1 region ignoring paths crossing depth discontinuity

At each projector,

For each pixel in overlap region

Find all corresponding pixels in other projectors

Assign weights inversely proportional to the shortest distance

800

FIG. 8

FIG. 9 is a block diagram of a system 900 for generating a 3D model of a vehicle from an animation video. The system 900 includes a camera 901, a Register Projector 920, a Segment 3D Model 930, an Edit Segmented 3D Model 940, a Virtual Segmented Model 941, a Real-time Rendering Correcting Projecting 950, and an Animation Video 951. The camera 901 captures a vehicle 901 on a road 934. The Register Projector 920 registers the captured data with a 3D Model 911 to generate a Segmented 3D Model 930. The Segment 3D Model 930 is then edited to create an Edit Segmented 3D Model 940, which is used to generate a Virtual Segmented Model 941. Finally, the Virtual Segmented Model 941 is rendered in real-time to produce the Animation Video 951.

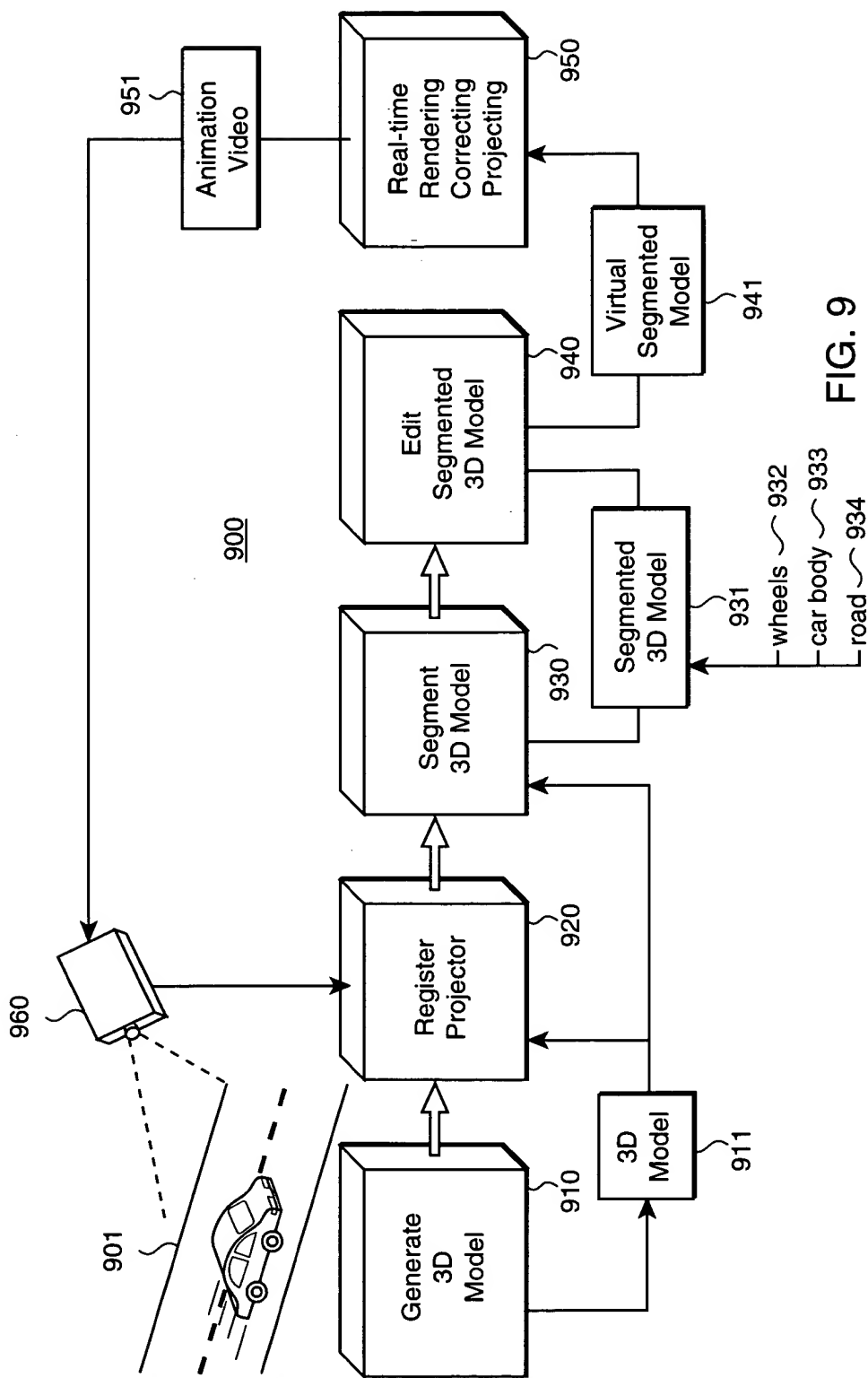


FIG. 9